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United States Patent Application
of
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for
Method and Apparatus for
Payment Processing Using
Debit-based Electronic Funds Transfer and
Disbursement Processing Using
Addendum-based Electronic Data Interchange

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BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates generally to the processing of payments and disbursements. More particularly, the invention relates to a method and apparatus for processing payments using debit-based electronic funds transfer and processing disbursements using addendum-based electronic data interchange.

Description of the Related Art

If an employee owes a permissive or mandatory obligation to a third party, the employee has few options for making recurring payments through the employer. Presently, most employers do not have the capability to process payments and disbursements for an employee through their payroll systems. If an employee has a recurring permissive obligation, the employee may make payments on this obligation through the traditional means, such as, for example, payment by cash, payment by a check, or electronic payment through the employee's bank. Similarly, if an employee has a recurring mandatory obligation, such as, for example, a child support payment, an alimony payment, or other similar court-enforced mandatory obligations, the employee may also make payments on these obligations through the same traditional methods. In either of these situations, however, there are few options for an employee to make payments or disbursements through an employer.

For recurring mandatory obligations, one option is for an employer to withhold an amount from an employee's wages and to make subsequent disbursement of the amount to a particular receiving entity. This withholding generally occurs as a court-sanctioned withholding, such as a garnishment. For example, there are presently systems that allow the payment and disbursement of

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child support obligations from an employer directly into the bank account of a state's child support agency. One present system comprises computer software that allows an employer to extract data from any corporate financial application in order to process the obligation. The software then connects with an automated clearinghouse and processes an electronic payment for the obligation. The electronic transaction is a credit-based transaction. In a credit-based transaction, the automated clearinghouse issues a credit to the state agency based on the amount of the obligation. The bank for the state agency receives the credit and subsequently issues a debit against the bank account of the employer. The automated clearinghouse receives the debit from the bank of the state agency and processes the debit against the bank of the employer. When the amount of the obligation is satisfied through the automated clearinghouse, the credit held by the bank of the state agency is satisfied by the debit issued against the bank of the employer. Another present system performs similar operations, but the system functions only on its own proprietary software. These current methodologies for payment and disbursement processing are inefficient and undesirable based at least on three grounds.

First, the current methods for payment and disbursement processing require that employers use credit-based transactions. These transactions involve numerous interactions with an automated clearinghouse, which involve both financial and temporal inefficiencies. A credit-based transaction is financially inefficient because this type of transaction requires more interactions with an automated clearinghouse. Each time that a transaction passes through an automated clearinghouse, a processing fee is charged. Also, a credit-based transaction is temporally inefficient. Because a credit-based transaction must pass through an automated clearinghouse in multiple incarnations, this type of transaction takes more time to complete.

automated clearinghouse. These structural inefficiencies inure due to the inability of the employer to initiate or process electronic transactions through an automated clearinghouse.

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The inefficiencies and other shortcomings in the current methodologies for payment and disbursement processing reflect undesirable diminutions in capacity and quality that could be achieved by further development of improved payment and disbursement processing methods. Thus, the current payment and processing methods reflect an unsatisfactory development of methods and systems to process both the permissive and mandatory obligations of an employee by an employer and subsequent disbursement to an intended recipient.

SUMMARY OF THE INVENTION

The present invention is directed to a method and system that obviates problems due to the limitations and disadvantages of the prior art.

It is an object of one embodiment of the invention to provide a system whereby a collector of funds may easily process a payment and a disbursement.

It is another object of another embodiment of the invention to enable a collector to transmit an electronic payment and an addendum-based file to an accumulator agency for processing.

It is still another object of another embodiment of the invention to enable an accumulator agency to receive an electronic payment and to process a payment as a debit-based transaction.

It is yet another object of another embodiment of the invention to enable an accumulator agency to receive an addendum-based file and to process a disbursement based on the addendum information.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying drawings are included to provide a further understanding of the invention, are incorporated in and constitute a part of this specification, illustrate preferred embodiments of the invention, and, together with the description, serve to explain the principles of the invention.

In the drawings,

Figure 1 is a block diagram of a payment and disbursement processing system;

Figure 2 is a block diagram of a debit-based payment processing system in accordance with one embodiment of the present invention, as shown in Fig. 1;

Figure 3 is a block diagram of an addendum-based disbursement processing system in accordance with one embodiment of the present invention, as shown in Fig. 1;

Figure 4 is a block diagram of a payment and disbursement processing system, in accordance with a preferred embodiment of the present invention, as shown in Fig. 1;

Figure 5 is a block diagram of a collector, as shown in Fig. 1;

Figure 6 is a block diagram of an accumulator agency, as shown in Fig. 1;

Figure 7 is a block diagram of an intermediary/recipient, as shown in Fig. 2;

Figures 8A and 8B are samples of the contents of the financial electronic data interchange database and the electronic funds transfer database stored in the collector terminal shown in Fig. 5, the accumulator agency server shown in Fig. 6, and the intermediary/recipient terminal shown in Fig. 7;

Figures 9A and 9B are samples of the contents of the electronic data interchange addenda database stored in the collector terminal shown in Fig. 5, the accumulator agency server shown in Fig. 6, and the intermediary/recipient terminal shown in Fig. 7;

Figure 21 is a block diagram of a disbursement system, in accordance with another alternative embodiment of the present invention, as shown in Fig. 3.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Introduction

The system of a preferred embodiment of the invention avoids the inefficiencies and shortcomings of the prior art payment and disbursement methodologies by integrating the collection of payment and disbursement information by an employer and transmitting the information to an accumulator agency. The accumulator agency then processes the payment as a debit-based transaction and processes the disbursement as an addendum-based transaction. In this system, all parties benefit: the payor benefits by the availability of a simple method for payment and disbursement processing through an employer, the employer benefits by a fast and inexpensive method for transmitting payments and disbursements from an employee to a recipient, and the recipient benefits from the timely transmittal and receipt of a payment. The system is also beneficial to disbursement processors because the system allows for efficient transmittal of disbursement information without payment overhead.

A preferred system consistent with the invention comprises several components, including a collector, an accumulator agency, and an intermediary/recipient. From an initiator, the collector receives payment and disbursement information, which is initially stored at the collector. The collector maintains a database of payment and disbursement information pursuant to each initiator. The accumulator agency serves as a processing station between the collector and the recipient/intermediary. The accumulator agency receives the payment and disbursement information

from the collector, verifies the validity of the information, and if valid, further processes the payment and disbursement. For payment processing, the accumulator agency transmits payments as debit-based transactions. For disbursement processing, the accumulator agency transmits disbursements as addendum-based transactions.

System

Figure 1 shows a payment and disbursement system according to one embodiment of the present invention. System 100 includes initiator 110, collector 120, accumulator agency 130, debit-based payment processing 140, and addendum-based disbursement processing 150. Initiator 110, which is preferably an employee seeking to initiate a permissive payment and disbursement or an employee subject to a mandatory payment and disbursement, transacts with collector 120, which is preferably an employer. Collector 120 receives the payment and disbursement information from initiator 110, and collector 120 records the information in a database and transmits the information to accumulator agency 130. Accumulator agency 130 verifies and processes the payment and disbursement information. For payment processing, accumulator agency 130 transmits the payment according to debit-based payment processing 140. Debit-based payment processing 140 incorporates financial processing information. For disbursement processing, accumulator agency 130 transmits disbursement information according to addendum-based disbursement processing 150. Addendum-based disbursement processing 150 incorporates the non-financial information contained within the addendum.

Figure 2 illustrates an embodiment of a debit-based payment processing system consistent with system 100 shown in Fig. 1. As shown in Fig. 2, debit-based payment processing system 200 includes

collector 120, accumulator agency 130, accumulator agency's bank 210, automated clearing house (ACH) 220, collector's bank 230, intermediary/recipient's bank 240, and intermediary/recipient 250. As described in Fig. 1, collector 120 receives the payment and disbursement information, records the information in a database, and then transmits the information to accumulator agency 130. The transmission of this information occurs in the form of an addendum-based financial electronic data interchange (FEDI) file. Electronic data interchange (EDI) describes the computer to computer exchange of information from one entity to another using electronic communication, and electronic funds transfer (EFT) describes the exchange of an electronic payment using electronic communication. FEDI is a combination of an EDI disbursement information with an EFT electronic payment. Accumulator agency 130 receives the FEDI file, verifies the validity of the information in the file, and then records the information in a database. Following the validation of the FEDI file, accumulator agency 130 segregates the payment information and the disbursement information from the FEDI file. Accumulator agency 130 then sends the payment information to debit-based payment processing 140 and the disbursement information to addendum-based disbursement processing 150.

For the processing of the payment according to Fig. 2, accumulator agency 130 transmits an EDI addendum to intermediary/recipient 250, with data indicating that a payment has been made. Also, accumulator agency 130 transmits an EFT transaction to accumulator agency's bank 210. Notably, accumulator agency 130 may transmit any number of EFT transactions to accumulator agency's bank 210 for processing. For example, if a payment is due to an intermediary/recipient from 500 entities, accumulator agency 130 may transmit all 500 payments as one EFT transaction to accumulator agency's bank 210 for processing. In so doing, accumulator agency 130 not only utilizes an efficient means of transmitting an EFT transaction but also saves transaction costs by using a single

EFT transaction. For example, accumulator agency 130 could transmit this single EFT transaction containing 500 payments using the CTX format, which provides for up to 9,999 payments.

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B4* Once accumulator agency's bank 210 receives the EFT transaction from accumulator agency 130, accumulator agency's bank 210 must process each of the individual debit-based transactions contained within the EFT transaction. Like accumulator agency 130, accumulator agency's bank 210 may also use various EFT formats for processing multiple payments through automated clearing house (ACH) 220. ACH 240 is a clearing house for processing financial transactions through the Federal Reserve system, such as, for example, the National Automated Clearinghouse Association (NACHA).

Following transmission of the payment information to ACH 220, ACH 220 then processes the debit-based transactions initiated by accumulator agency's bank 210. Because these transactions are debit-based transactions, ACH 220 performs merely two transactions. First, ACH 220 issues a debit against the payor of the payment, and second, ACH 220 issues a credit to the recipient of the transaction. Thus, for the debit-based transactions initiated by accumulator agency's bank 210, ACH 220 initiates a debit transaction to collector's bank 230 and a credit transaction to intermediary/recipient's bank 240. Again, like collector 120 and accumulator agency 130, ACH 220 may utilize various EFT formats for multiple transmissions of these electronic transactions. Once ACH 240 has completed these transactions, payment processing has occurred, as intermediary/recipient 250 has received payment in intermediary/recipient's bank 240 from collector 120.

Figure 3 illustrates an embodiment of an addendum-based disbursement processing system consistent with system 100 shown in Fig. 1. As shown in Fig. 3, addendum-based disbursement processing system 300 includes intermediary 310, accumulator agency 130, disbursement 320, paper

check 322, direct deposit 324, debit deposit 326, and recipient 330. As described in Fig. 1, collector 120 receives payment and disbursement information from initiator 110, records the information in a database, and then transmits the information to accumulator agency 130. The transmission of payment and disbursement information occurs via a FEDI file. Once accumulator agency 130 receives the FEDI file, and following verification, accumulator agency 130 records the information in a database and segregates the payment and the disbursement from the FEDI file. Accumulator agency 130 then processes the disbursement information according to addendum-based disbursement processing 150.

For the processing of the disbursement according to Fig. 3, intermediary 310 initially receives an EDI file from accumulator agency 130, as shown in Fig. 2. This EDI file contains information relating to the payment made by initiator 110 and requests instructions regarding the disbursement. Intermediary 310 then processes the information and determines whether a disbursement is to be made. If a disbursement is approved by intermediary 310, intermediary 310 transmits another EDI file to accumulator agency 130 with instructions for the disbursement. Accumulator agency 130 then processes disbursement 320. Disbursement 320 may include any of a number of several disbursement methods, including paper check 322, direct deposit 324, and debit deposit 326. Accumulator agency 130 processes paper check 322 by the traditional methodology, by printing and mailing the check to recipient 330. Accumulator agency 130 processes direct deposit 324 also through the traditional methods, by issuing the deposit by EFT. Accumulator agency 130 processes debit deposit 326 through any number of available options by issuing an EFT, including the creation of a debit deposit at a bank operated by a state agency or the creation of a debit deposit account at a bank operated by accumulator agency 130. Whatever the methodology for disbursement, according to system 300, disbursement 320

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processes a disbursement to recipient 330 according to instructions provided to accumulator agency 130 from intermediary 310.

Fig. 4 illustrates a preferred embodiment for a payment and disbursement system according to the present invention. System 400 depicts a payment and disbursement system for transmitting child support obligations from a non-custodial to a custodial parent through an employer. Of course, one skilled in the art will realize many alternative applications for this system.

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As shown in Fig. 4, system 400 anticipates that initiator 110 (in the case of the preferred embodiment, an employee) has already initiated a payment and disbursement. System 400 thus shows three alternatives for collector 120 (shown here as employer 410) for initiating a payment and disbursement consistent with the invention. Employer 410 depicts alternative ways that an employer can initiate a payment and disbursement for an employee, illustrated as employer 412, employer 414, and employer 416. Employer 412 has only one employee subject to a child support obligations, employer 412 has 200 employees subject to child support obligations, and employer 416 also has 200 employees subject to child support obligations. In the case of employer 412, the FEDI file transmitted from employer 412 to accumulator agency 130 comprises the CCD+ format. As noted above, the CCD+ format provides for an EFT transaction plus an addendum, but the CCD+ format is limited to one addendum per transaction. Thus, employer 414 also utilizes the CCD+ format, but due to the limitations of this EFT format, employer 414 would be required to use 200 separate FEDI transactions in the CCD + format. In contrast, employer 416 transmits all 200 transactions utilizing the CTX format. As noted above, the CTX format allows for the transmission of a payment with up to 9,999 addenda records. Employer 416 therefore saves both time and expense by using the CTX format. Whatever the format, once employer 410 transmits the necessary FEDI files, accumulator agency 130

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receives the FEDI files from employer 410 and processes the payment and disbursement transactions.

For payment processing according to system 400, accumulator agency 130 transmits an EDI transaction to state 460 and an EFT transaction to accumulator agency's bank 210. The EDI transaction from accumulator agency 130 to state 460 indicates that a payment has been made. The EFT (or FEDI) transaction from accumulator agency 130 to accumulator agency's bank 210 contains the payment information to initiate a payment from initiator 110 (that is, a non-custodial parent) to recipient 330 (that is, custodial parent 480). As depicted in system 400, state 460 comprises state A 462, state B 464 and state C 466. System 400 contains three representations of state 460 for purposes of describing three alternatives for payment and disbursement processing. For similar reasons, system 400 contains three representations of state bank 470, including state A's bank 472, state B's bank 474, and state C's bank 476, and accordingly, system 400 contains three representations of custodial parent 480, including custodial parent A 482, custodial parent B 484, and custodial parent C 486.

Continuing with payment processing according to system 400, accumulator agency's bank 210 receives the payment information from accumulator agency 130 and processes the payment via ACH 220 as a debit-based transaction. In processing the debit-based transaction, ACH 220 issues a debit against employer's bank 440 and issues a credit to state bank 470. In this manner, the payment is completed from initiator 110, or the non-custodial parent, to state 460 via employer 410 for the benefit of recipient 330, or custodial parent 480. The particular steps associated with the processes of payment processing are described in connection of Figs. 10-16.

For disbursement processing according to system 400, state 460 issues an EDI transaction to accumulator agency 130, authorizing a disbursement to custodial parent 480. Accumulator agency 130 then processes the disbursement 320 according to one of three methods, paper check 322, direct

the reference to a state could even apply to a nongovernmental entity, such as, for example, a mutual fund, a bill payment center, or any other commercial entity. Indeed, all the designations in system 400 entail such broad applications in the context of payment and disbursement processing.

Figure 5 illustrates one embodiment of collector 120 used in system 100 shown in Fig. 1. As shown in Fig. 5, collector 120 preferably includes collector terminal 500 equipped with conventional hardware, including central processing unit (CPU) 510, random access memory (RAM) 512, display memory 514, video interface circuit (VIC) 516, input/output controller (I/O) 518, data storage device (disk) 520, input device 530, display 540, external device 550, and optional network interface 560. Collector terminal 500 basically functions as a conventional data processor.

As shown in Fig. 5, CPU 510 is directly coupled to each of the other elements of collector terminal 500. CPU 510 executes program code (not shown) stored in one or more RAM 512 or disk 520 to carry out the functions and acts described in connection with collector terminal 500. CPU 510 preferably comprises at least one high-speed digital data processor adequate to execute program modules consistent with the invention, such as accumulation of a payment and disbursement, transmission of a payment and disbursement, and the processing and completion of a payment and disbursement. The processes performed by these modules are described in connection with Figs. 10-21. CPU 510 interacts with RAM 512 and disk 520 to execute stored program code according to conventional data processing techniques.

As also shown in Fig. 5, input device 530 permits collector terminal 500 to receive payment and disbursement information about initiator 110 and, although shown as a single device, may comprise one or more data input devices of various types, such as an alphanumeric keyboard, a numeric keypad, a bar code scanner, a credit card reader, a disk drive, a memory, an electronic

communication line, and a wireless transceiver. Input device 530 preferably transmits received information to CPU 510 for storage in disk 520. VIC 516 comprises a video driver sending signals to display 540 displaying either text or graphics based on the contents of display memory 514. Display 540 is preferably large enough to display information relating to payment and disbursement processing for initiators 110. External device 550 allows operability of other components with collector 120, such as, for example, a modem, a printer, a scanner, a photocopying device, or any other form of input or output device. Optional network interface 560 links CPU 510 to allow communication with other collector devices, such as multiple collector terminals 500.

As shown in Fig. 5, disk 520 preferably comprises a large capacity memory capable of maintaining FEDI file database 522 and EDI addenda database 524. FEDI file database 522 contains data pertaining to payment and disbursement information accumulated from initiators 110. The contents of FEDI file database 522 are transmitted to accumulator agency 130 for processing. EDI addenda database 524 contains the disbursement information from FEDI file database 522. Data contained in one or more of these databases 522 and 524 may be periodically updated from collectors 120 via input device 530, external device 550, or optional network interface 560. Samples of the records and their respective fields contained in databases 522 and 524 are shown in and described in connection with Figs. 8A-8B and 9A-9B.

Figure 6 illustrates one embodiment of accumulator agency 130 used in system 100 shown in Fig. 1. Accumulator agency 130 preferably comprises accumulator agency server 600 equipped with conventional hardware, including CPU 610, RAM 612, display memory 614, VIC 616, I/O 618, disk 620, input device 630, display 640, external device 650, and optional network interface 660. In general, elements of accumulator agency server 600 common to collector terminal 500 preferably

intermediary/recipient terminal 700 to external computers or networks. In a preferred embodiment, one such external computer is accumulator agency server 600.

As shown in Fig. 7, disk 720 maintains EDI addenda database 721, EFT credit database 723, disbursement database 725, initiator database 727, and recipient database 729. EDI addenda database 721 contains the addendum information transmitted by accumulator agency server 600. Indeed, EDI addenda database 721 contains data corresponding to EDI addenda database 626. EFT credit database 723 contains the credit transactions transmitted from ACH 220. Disbursement database 725 contains information designating whether a disbursement will be authorized and transmitted to accumulator agency server 600. Initiator database 727 contains a listing of authorized initiators for payment transactions. Recipient database 729 contains a listing of the authorized recipients for the receipt of disbursements. Samples of the records and their respective fields contained in databases 721, 723, 725, 727, and 729 are shown in and described in connection with Figs. 8A-8B and 9A-9B.

Database Formats

Samples of the contents of FEDI file database 522, EDI addenda database 524, FEDI file database 622, EFT debit database 624, EDI addenda database 626, EDI addenda database 721, EFT credit database 723, disbursement database 725, initiator database 727, and recipient database 729 are shown in Figs. 8A-8B and 9A-9B. The specific data and fields illustrated in these figures represent only one embodiment of the records stored in the databases consistent with the invention. In most cases, the fields shown in Figs. 8A-8B and 9A-9B are relatively straight forward and self-explanatory. In addition to the disclosed databases, the data and fields of these databases, as well as the number of

databases, can be readily modified from the described embodiments, for example, to include more or fewer data fields.

FEDI file database 522 maintained in collector terminal 500 contains a listing of information relating to payments and disbursements for use by collector terminal 500. Figures 8A and 8B illustrate a sample of the contents of FEDI file database 522, with Fig. 8A depicting a sample of the contents of a FEDI file in the CCD format and Fig. 8B depicting a sample of a FEDI file in the CTX format.

As shown in Fig. 8A, using the CCD format, FEDI file database 522 contains eleven fields with data element names corresponding to, for example, record type code, transaction code, receiving depository financial institution (DFI) identification, check digit, DFI account number, amount, identification number, receiving company name, discretionary data, addenda record indicator, and trace number. Figure 8A also indicates the attributes of each field. After the field row and the data element name row, the field inclusion requirement row indicates the requirements for each of the eleven fields, "M" indicating a mandatory element, "R" indicating a required element, and "O" indicating an optional element. The contents row indicates a sample structure for the contents of each field, and the link row indicates the length of characters available for each field. Finally, the position row indicates the position of the data element in the database record. The CCD format allows a database record of 94 characters.

For field 1, located at position 01-01, record type code allows a single character, which the example shows as a "6."

For field 2, located at position 02-03, transaction code encompasses two characters, which the example shows as requiring a numeric form.

For field 3, located at position 04-11, receiving DFI identification provides for 8 characters, which the example depicts in the form, "TTTTAAAA."

For field 4, located at position 12-12, check digit encompasses a single character, which the example shows as requiring a numeric form.

For field 5, located at position 13-39, DFI account number entails 17 characters, which the example shows as allowing any alphanumeric form.

For field 6, located at position 30-39, amount provides for a character length of 10, which the example shows as SSSSSSSSçç (thus, allowing a numerical entry of 999,999.99 or below).

For field 7, located at position 40-54, identification number spans 15 characters, which the example shows as allowing any alphanumeric form.

For field 8, located at position 55-76, receiving company name encompasses 22 characters, which the example shows as allowing any alphanumeric form.

For field 9, located at position 77-76, discretionary data involves only 2 characters, which the example shows as allowing any alphanumeric form.

For field 10, located at position 79-79, addenda record indicator allows a single character, which the example shows as requiring a numeric form.

For field 11, located at position 80-94, trace number encompasses a number of up to 15 characters, which the example shows as requiring a numeric form.

As shown in Fig. 8B, using the CTX format, FEDI file database 522 may also contain thirteen fields with data element names corresponding to, for example, record type code, transaction code, receiving DFI identification, check digit, DFI account number, total amount, identification number, number of addenda records, receiving company name/ID number, reserved, discretionary data,

row structure of the addenda record depicted in Fig. 9A corresponds to the structure and contents of the rows in Figs. 8A-8B. Of the five fields shown in Fig. 9A, payment related information (field 3) contains the pertinent disbursement information, in the context of EDI addenda database 524.

Figure 9B illustrates a sample of the contents of EDI addenda database 524, in its preferred implementation of a payment and disbursement processing system for child support payments. As shown in Fig. 9B, EDI addenda database 524 contains records having fields with segment identifiers for deductions (DED) corresponding to, for example, application identifier DED01, case identifier DED02, pay date DED03, payment amount DED04, non-custodial parent social security number DED05, medical support indicator DED06, non-custodial parent name DED07, FIPS code DED08, an employment termination indicator DED09. Therefore, as shown in Fig. 9B, the addenda record for a child support payment contains nine segment identifiers.

Application identifier DED01 indicates the type of deduction being withheld from an employee's pay.

Case identifier DED02 is the case number or court order number that the child support receiving agency uses for the processing of payments and disbursements.

Pay date DED03 indicates the pay date or the date of income withholding from the non-custodial parent.

Payment amount DED04 indicates the amount of withholding from the pay of the non-custodial parent, which is paid to the child support receiving agency.

Non-custodial parent social security number DED05 provides the child support receiving agency with the social security number of the non-custodial parent.

Medical support indicator DED06 indicates whether the non-custodial parent has family medical insurance available through his or her employer.

Non-custodial parent name DED07 indicates the first seven letters of the last name of the non-custodial parent followed by at least three of the first three letters of his or her first name.

Federal information process standard (FIPS) code DED08 refers to the code used by the child support entity receiving the transaction, usually indicating the state and county of the child support entity.

Employment termination indicator DED09 is used to indicate to the child support enforcement agency that the non-custodial parent's employment has been terminated.

For the contents of an EDI addendum for child support payment and disbursement, Fig. 9B also indicates the mandatory and permissive attributes of each field. Attribute column 1 indicates the field requirement, "M" indicating a mandatory element and "O" indicating an optional element. Attribute column 2 indicates the data type, including "AN" for string type data, "DT" for date type data, "ID" for identifier data from a predefined list of values, and "N2" indicating a numeric type data with two decimal places to the right of a fixed decimal point (indicating a financial amount). Attribute column 3 indicates the minimum/maximum allowable length for the element, for example, 1/20 indicates a minimum of one character and a maximum of 20 characters.

Of course, the example of the addenda requirements for a child support payment and disbursement are only one implementation of a system consistent with the present invention. Other implementations for payment and disbursement processing may also be used, such as, for example, alimony payments, payments on a judgment, payments on an attachment, tax payments, or even

permissive payments, such as, for example, payments for investments or a mutual fund, payments upon a loan, or any other form of private or commercial obligation.

FEDI file database 622 maintained in accumulator agency server 600 contains a listing of information corresponding to FEDI file database 522. FEDI file database 622 contains those FEDI files transmitted to accumulator agency server 600 by collector terminals 500. Following transmission of these FEDI files, accumulator agency server 600 then validates the information, and if valid, segregates the EFT information from the EDI information. EFT debit database 624 contains the EFT information obtained from FEDI file database 622, and EDI addenda database 626 contains the EDI information obtained from FEDI file database 622. As described above, Figs. 8A and 8B show samples of EFT information, and Figs. 9A and 9B show samples of EDI information. EFT debit database 624 and EDI addenda database 626 contain information consistent with that shown in and described in connection with Figs. 8A-8B and 9A-9B.

EDI addenda database 721 maintained in intermediary/recipient terminals 700 contains a listing of disbursement information corresponding to the EDI information transmitted to intermediary/recipient terminal 700 from accumulator agency server 600, which was transmitted to accumulator agency server 600 from collector terminals 500. EDI addenda database 721 contains information similar to that contained within EDI addenda database 524 and EDI addenda database 626. Figures 9A and 9B show samples of EDI information. Intermediary/recipient terminal 700 receives EDI transactions into EDI addenda database 721 from accumulator agency server 600 in order to process disbursements according to the information contained within the EDI addenda.

EFT credit database 723 maintained in intermediary/recipient terminal 700 contains information relating to payments processed through accumulator agency's bank 210 and ACH 220 for

the purpose of later distribution and processing. In an implementation pertaining to child support, once initiator 110, or a non-custodial parent, has issued a payment through employer 410 to custodial parent 480, EFT credit database 723 indicates to intermediary/recipient terminal 700 (such as a terminal at a state child support agency) that the non-custodial parent has paid the obligation. Once the payment has occurred, intermediary/recipient terminal 700 may then authorize the disbursement to custodial parent 480.

Disbursement database 725, initiator database 727, and recipient database 729 maintained in intermediary/recipient terminal 700 enable authorization of disbursements pursuant to the information contained within EDI addenda database 721. Initiator database 727 contains a listing of the authorized initiators for payment processing, recipient database 729 contains a listing of the authorized recipients for disbursement processing, and disbursement database 729 contains a listing of disbursements authorized for processing. EFT credit database 723 thus indicates to disbursement database 725 whether a disbursement is authorized. Once a disbursement is authorized under disbursement database 725, intermediary/recipient terminal 700 transmits such authorization to accumulator agency server 600. Disbursement database 725 may also contain a historical database of prior disbursements. In an implementation pertaining to child support, for example, initiator database 727 would contain a listing of initiators 110, or non-custodial parents, recipient database 729 would contain a listing of custodial parents 480, and disbursement database 729 would contain the information regarding payments due by the non-custodial parents to custodial parents for child support obligations.

Process

In processing a payment and disbursement from collector 120 (such as an employer) based on an obligation of initiator 110 (such as an employee), the system shown and described in connection with Fig. 1 preferably executes several distinct modules, or processes. These processes include facilitating the accumulation of a payment and disbursement at collector 120 from initiator 110, transmitting the payment and disbursement information from collector 120 to accumulator agency 130, processing the payment via debit-based payment processing 140, and processing the disbursement via addendum-based disbursement processing 150. The steps associated with these processes are described in connection with Figs. 10-21 and can be performed in any order, unless otherwise specified or dictated by the steps themselves.

In describing the processes consistent with the invention, various implementations of systems consistent with the invention are also described herein. For example, Fig. 10 illustrates a payment processing system consistent with the preferred embodiment of the invention as shown in Fig. 4. Figs. 11 and 12 depict flow diagrams illustrating the series of steps performed by system 1000 as shown in Fig. 10. In initiating payment processing pursuant to the preferred embodiment, employer 410 (shown here as employers 412, 414, 416) receives a withholding order from initiator 110 (here, a non-custodial parent/employee), authorizing employer 410 to withhold funds from salary regarding a child support obligation (step 1110). If employer 410 receives a withholding order, the order will involve either a wage assignment income withholding or wage lien from a state agency or court ordering the withholding of funds from the salary of an employee pursuant to a child support obligation. Alternatively, an employee can also authorize an employer to withhold funds from his or her salary for a child support obligation. Whatever the form of authorization, once authorized, the employer

converts the withholding obligation into a FEDI file (step 1120). This FEDI file may contain a payment with addendum information regarding disbursement in either the CCD or CTX formats. The FEDI file preferably is in the CTX format for greater efficiency and cost savings. Following the creation of the FEDI file, the employer then transmits the FEDI file to accumulator agency 130 (step 1130).

Once accumulator agency 130 receives the FEDI file from employer 410 (step 1202), accumulator agency 130 validates the FEDI transmission (step 1205). The validation of the FEDI transmission may include certification of the employer. In this certification process, accumulator agency 130 determines whether employer 410, which transmitted the FEDI file, is registered with accumulator agency 130. If employer 410 is not registered with accumulator agency 130, the FEDI file is rejected (step 1210). If employer 410 is registered with accumulator agency 130, employer 410 is certified and processing of the FEDI file continues. Note that this certification step is only one of many possible certification steps pursuant to methods consistent with the invention. Other certification steps may include, for example, validation of the data contained within the FEDI file.

Following certification of the employer, accumulator agency 130 initiates two transmissions. On the one hand, accumulator agency 130 sends an EDI file to state 460 (shown here as state A 462, state B 464, and state C 466) (step 1220). This EDI file indicates to state 460 that a payment has been made by initiator 110 (or, an employee) via employer 410. Once state 460 receives the EDI file, state 460 uses the information contained within the addendum and updates its records pertaining to the payment by the employee (step 1230). On the other hand, accumulator agency 130 also periodically accumulates EFT files for subsequent transmission (step 1240). Accumulator agency 130 preferably transmits EFT files by the use of a FEDI file. For example, using the CTX format, accumulator

agency 130 can accumulate 9,999 EFT payment transactions for transmissions in a single FEDI file. Once accumulator agency 130 has created such a FEDI file, the file is transmitted to accumulator agency's bank 210 (step 1250).

Upon receipt of the FEDI file from accumulator agency 130, accumulator agency's bank 210 processes the payment transactions (step 1260). If accumulator agency 130 transmitted a FEDI file, accumulator agency's bank 210 segregates and processes the payments, but if accumulator agency 130 transmitted a single EFT file, then accumulator agency's bank 210 simply processes the single payment transaction. Once accumulator agency's bank 210 has accumulated and processed the payment transactions received from accumulator agency 130, accumulator agency's bank 210 then interacts with ACH 220. As done by accumulator agency 130, accumulator agency's bank 210 may also utilize FEDI when transacting with ACH 220. Thus, accumulator agency's bank may periodically accumulate and transmit payment transactions in the form of a FEDI file in the CTX format to ACH 220

Once ACH 220 receives the payment transaction information from accumulator agency's bank 210, ACH 220 processes the payments as debit-based transactions. Accordingly, ACH 220 processes the payments as debit-based transactions by transmitting a debit transaction to employer's bank 440 (step 1280) and transmitting a credit transaction to state bank 470 (step 1270), such as, state A's bank 472, state B's bank 474, and state C's bank 476. Following the processing of these transactions by ACH 220, the payment obligation from employer's bank 440 is satisfied with regard to state 460, for example, including state 463, state 464 and state 466.

Although the system and processes described by Figs. 10-12 describe the preferred embodiment for the payment processing system shown in Fig. 4, other implementations are also available. Figure 13, for example, illustrates an alternative embodiment for a payment processing

system consistent with the invention. Figures 14-15 depict flow diagrams illustrating the series of steps performed by system 1300 as shown in Fig. 13. Similar to system 1000 in Fig. 10 and the processes described in Figs. 11-12, system 1300 allows collectors 120 (shown here as collector 1312, collector 1314, and collector 1316) to transmit payment information to accumulator agency 130 in alternative methods (step 1410). In contrast to the system and methods described in Figs. 10-12, the system and methods consistent with this embodiment do not limit collector 120 to an employer. Otherwise, system 1300 and the associated methods operate similarly as system 1000 and its associated methods. Collectors 120 create a FEDI file (step 1420) and transmit the FEDI file to accumulator agency 130 (step 1430). Accumulator agency 130 then receives the FEDI file from collectors 120 (step 1502) and performs certification (step 1505).

If certification fails, the FEDI file is rejected (step 1510). If certification passes, accumulator agency 130 performs two steps. First, accumulator agency 130 sends an EDI file to intermediary/recipient 250 (step 1520). Upon receipt of the EDI file, intermediary/recipient 250 updates its records regarding the payment described in the EDI file (step 1530). In contrast to the system and methods described in Figs. 10-12, the system and methods consistent with this embodiment do not limit intermediary/recipient 250 to a state. However, to show that payment transaction can be processed to multiple recipients, system 1300 distinguishes intermediary/recipients 1322, 1324, 1326. Second, accumulator agency accumulates EFT files from the FEDI files received from collectors 120 and periodically creates combined FEDI files for later transmission (step 1540). Accumulator agency 130 then transmits the FEDI file to accumulator agency's bank 210 (step 1550). Accumulator agency's bank 220 then receives the FEDI file from accumulator agency 130 and processes the payment as a debit-based transaction via ACH 220 (step 1560). ACH 220 subsequently

220. Notably, in contrast to the system and methods described by Figs. 10-15, the system and methods consistent with Fig. 16 allow accumulator agency 130 to transact directly with ACH 220. In this manner, accumulator agency 130 functions as a bank. Following the transactions between ACH 220 and accumulator agency 130, ACH 220 processes the payments as debit-based transactions. In so doing, ACH 220 processes a debit transaction to collector's bank 1310 and transmits a credit transaction to intermediary/recipient's bank 240. Like the system and methods consistent with the embodiment of the invention associated with Figs. 13-15, the system and methods consistent with Fig. 16 also provide for a more dynamic payment processing system. By allowing accumulator agency 130 to transact directly with ACH 220, transaction steps are omitted that allow for a more efficient and thus timely processing of payments. Of course, the omission of this one step includes but one of many changes that can be made to the systems and methods for payment processing consistent with the invention.

Figure 17 illustrates a disbursement processing system consistent with the preferred embodiment of the invention as shown in Fig. 4. Fig. 18 depicts a flow diagram illustrating the series of steps performed by system 1700 as shown in Fig. 17. In transacting disbursement processing pursuant to the preferred embodiment, state 460 (here shown as state A 462, state B 464, and state C 466) computes the child support disbursement due to recipient 330 and transmits the disbursement information in an EDI file to accumulator agency 130 (step 1810). Accumulator agency 130 receives the EDI file from state 460 and processes the disbursement (step 1820). If the disbursement is a check (step 1825), accumulator agency 130 prints the check and transmits it directly to custodial parent 480 (step 1830). In system 1700, the issuance of a check by accumulator agency 130 is transmitted to custodial parent A 482. The issued check is drawn on the bank account of state 460. In system 1700,

the check issued by accumulator agency 130 to custodial parent A 482 is drawn on state A's bank 472 (step 1835).

If the disbursement is not a check, accumulator agency 130 must process an electronic transaction for the disbursement (step 1840). To do so, accumulator agency 130 issues an EFT/FEDI transaction to accumulator agency's bank 210 (step 1842) and accumulator agency's bank then transmits the transaction to ACH 220 (step 1845). ACH 220 then transmits the EFT/FEDI transaction to state bank 470 (step 1850). If the EFT/FEDI transaction is for a direct deposit (step 1855), state bank 470 subsequently issues a direct deposit via ACH 220 (step 1860). In system 1700, the issuance of a direct deposit by accumulator agency 130 results in the transmission of a direct deposit to ACH 220. ACH 220 then processes the direct deposit to custodial parent B's bank 490. In so doing, ACH 220 issues a debit transaction to state B's bank 474 (step 1866) and issues a credit transaction to custodial parent B's bank 490 (step 1867). Thereby, custodial parent B 484 receives a disbursement in the form of a direct deposit (step 1868).

If disbursement is not by direct deposit, accumulator agency 130 processes the disbursement as a debit deposit (step 1870). In establishing a debit deposit, accumulator agency 130 has the option of where to locate the debit deposit account. In system 1700, accumulator agency 130 establishes the direct deposit account at state C's bank 476, by transmitting the debit deposit information via ACH 220. Thereby, custodial parent C 486 receives the disbursement in the form of a debit account at state C's bank 476 (step 1880). Alternatively, accumulator agency 130 can also establish a debit deposit account at accumulator agency's bank 210. Additionally, although not depicted in Fig. 18, the system and methods consistent with the preferred embodiment also contemplate the issuance of an invoice to custodial parent 480 for any disbursement (as indicated by the dotted line on Fig. 17).

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Although the system and processes described by Figs. 17-18 describe the preferred embodiment for the disbursement processing system shown in Fig. 4, other implementations are also available. Fig. 19, for example, illustrates an alternative embodiment for a disbursement processing system consistent with the invention. Fig. 20 depicts a flow diagram illustrating the series of steps performed by system 1900 as shown in Fig. 19. Similar to system 1700 in Fig. 17 and the processes described in Fig. 18, system 1900 enables intermediary 310 to compute a payment due to recipient 330 and to transmit the disbursement information in an EDI file to accumulator agency 130 (step 2010). In contrast to the system and methods described in Figs. 17-18, the system and methods consistent with this embodiment do not limit intermediary 310 to a state. Otherwise, system 1900 and the associated methods operate similarly as system 1700 and its associated methods. Accumulator agency 130 receives the EDI file from intermediary 310 and processes the disbursement (step 2020). If the disbursement is a check (step 2025), accumulator agency 130 prints the check and transmits it directly to recipient 330 (step 2030). Again, in contrast to the system and methods described in Figs. 17-18, the system and methods consistent with this embodiment do not limit recipient 330 to a custodial parent. However, to show that multiple disbursement transaction can be processed to multiple recipients, system 1900 distinguishes recipient A 1932, recipient B 1934, and recipient C 1936. As indicated in system 1900, the issuance of a check by accumulator agency 130 is transmitted to recipient A 1932. The issued check is drawn on the bank account of intermediary A's bank 1912. In system 1900, the check issued by accumulator agency 130 recipient A 1932 is drawn on intermediary A's bank 1912 (step 2035).

If the disbursement is not a check, accumulator agency 130 must process an electronic transaction for the disbursement (step 2040). To do so, accumulator agency 130 issues an EFT/FEDI

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transaction to accumulator agency's bank 210 (step 2042) and accumulator agency's bank then transmits the transaction to ACH 220 (step 2045). ACH 220 then transmits the EFT/FEDI transaction to intermediary/recipient's bank 240 (step 2050). If the EFT/FEDI transaction is for direct deposit (step 2055), intermediary/recipient bank 240 subsequently issues a direct deposit via ACH 220 (step 2060). In system 1900, accumulator agency 130 issues a direct deposit to ACH 220, which results in the transmission of a direct deposit to intermediary B's bank 1914, which transacts with ACH 220 to process the direct deposit to recipient B's bank 1920. In so doing, ACH 220 issues a debit transaction to intermediary B's bank 1914 (step 2066) and issues a credit transaction to recipient B's bank 1920 (step 2067). Thereby, recipient B 1934 receives a disbursement in the form of a direct deposit (step 2068).

FIG. 19

If disbursement is not by direct deposit, accumulator agency 130 processes the disbursement as a debit deposit (step 2070). Similar to the system and methods described in Figs. 17-18, in establishing a debit deposit, accumulator agency 130 has the option of where to locate the debit account. In system 1900, accumulator agency 130 establishes the direct deposit account at intermediary C's bank 1916, by transmitting the direct deposit information via ACH 220. Thereby, recipient C 1936 receives the disbursement in the form of a debit account at intermediary C's bank 1916 (step 2080). Alternatively, accumulator agency 130 can establish a debit deposit account at other locations, including accumulator agency's bank 210. Finally, although not depicted in Fig. 20, the system and methods consistent with this embodiment also contemplate the issuance of an invoice to recipient 330 for any disbursement (as indicated by the dotted line on Fig. 19).

As described above, the system and methods associated with Figs. 19-20 provide for a more dynamic disbursement processing system than the system and methods associated with Figs. 17-18.

The system and methods consistent herewith allow for disbursement processing for mandatory as well as permissive obligations. Also, the system and methods allow for disbursement processing from entities other than non-custodial parents, through entities other than states, and to entities other than custodial parents.

Fig. 21 illustrates another alternative embodiment for a disbursement processing system consistent with the invention. Similar to system 1900 described in Fig. 19, system 2100 operates in the same manner as the system and methods disclosed in Figs. 19-20, except system 2100 allows accumulator agency 130 to transact directly with ACH 220. In short, system 2100 allows accumulator agency 130 to function as a bank.

In system 2100 intermediary 310 (here shown as intermediary A 1912, intermediary B 1914, and intermediary C 1916) computes the disbursement due to recipient 330 and transmits the disbursement information in an EDI file to accumulator 130. Accumulator agency 130 receives the EDI file from intermediary 310 and processes the disbursement. If the disbursement is a check, accumulator agency 130 issues the check consistent with the system and methods disclosed for system 1700 in Figs. 19-20.

If the disbursement is not a check, accumulator agency 130 processes an electronic transaction for the disbursement by issuing an EFT/FEDI transaction directly to ACH 220. Notably, in contrast to the system and methods described by Figs. 17-20, the system and methods consistent with Fig. 21 allow accumulator agency 130 to transact directly with ACH 220. In this manner accumulator agency 130 functions as a bank. If the EFT/FEDI transaction is for a direct deposit, accumulator agency 130 issues a direct deposit via ACH 220. In system 2100, accumulator agency 130 issues a direct deposit to ACH 220, and in so doing, issues a debit transaction to accumulator agency 130 and issues a credit

transaction to recipient B's bank 1920. Thereby, recipient B 1934 receives a disbursement in the form of a direct deposit. Alternatively, if the disbursement is not by direct deposit, accumulator agency 130 processes the disbursement as a debit deposit. In establishing a debit deposit, accumulator agency 130 establishes a direct deposit account directly at accumulator agency 130. Thereby, accumulator agency 130 merely instructs recipient 1936 that a debit deposit account has been formed for its benefit. Although not depicted in Fig. 21, the system and methods consistent with this embodiment also contemplate the issuance of an invoice to recipient 330 for any disbursement (as indicated by the dotted line on Fig. 21).

Just as Fig. 16 describes a more dynamic payment processing system consistent with the invention by allowing accumulator agency 130 to function as a bank, the system and methods consistent with Fig. 21 enable the same advantages for a disbursement processing system. By allowing accumulator agency 130 to transact directly with ACH 220, transaction steps are omitted that allow for a more efficient and timely processing of disbursements. Of course, the omission of this one step includes but one of many changes that can be made to the systems and methods for disbursement processing consistent with the invention.

CONCLUSION

The systems consistent with the invention provide for more efficient and more economical methods for the processing of either or both payments and disbursements. The systems process payments using debit-based EFT and processes disbursements using addendum-based EDI. This improved payment and disbursement methodology provides many advantages over the current payment and disbursement technologies.

As described above, it will be apparent to those skilled in the art that various modifications and variations can be made in the processes of the present invention without departing from the spirit and scope of the invention. Thus, it is intended that the present invention cover the modifications and variations of this invention, provided they come within the scope of the appended claims and their equivalents. In this context, equivalents means each and every implementation for carrying out the functions recited in the claims, even if not explicitly described herein.

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